Another way to determine whether a sequence is strictly increasing is to show that the ratio \( \frac{a_{n+1}}{a_n} \)

is greater than 1. Similarly, we can show a sequence is strictly decreasing by showing \( \frac{a_{n+1}}{a_n} < 1 \).

Example: To see if \( \left\{ \frac{n}{4n-1} \right\}_{n=1}^{\infty} \) is strictly increasing or strictly decreasing, we consider the ratio

\[
\frac{a_{n+1}}{a_n} = \frac{n+1}{4(n+1) - 1} \quad \frac{n}{4n - 1} \quad \frac{4n^2 + 3n - 1}{4n^2 + 3n} < 1
\]

since the numerator is always 1 smaller than the denominator. Thus, the sequence is strictly decreasing.

Use the ratio \( \frac{a_{n+1}}{a_n} \) to determine if the given sequence is strictly increasing or strictly decreasing.

1. \( \left\{ \frac{1}{n} \right\}_{n=1}^{\infty} \)

2. \( \left\{ \frac{n}{2n+1} \right\}_{n=1}^{\infty} \)